




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,226	12/12/2003	Benjamin N. Eldridge	P56D1-US	3901
27520	7590	07/23/2004	EXAMINER	
FORMFACTOR, INC. LEGAL DEPARTMENT 2140 RESEARCH DRIVE LIVERMORE, CA 94550			ABRAMS, NEIL	
			ART UNIT	PAPER NUMBER
			2839	

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/735,226	Applicant(s) ELDRIDGE 	
	Examiner Neil Abrams	Art Unit 2839	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-15,20,21,28-30,33-40 and 51-57 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13-15,20,21,28-30,33-40 and 51-57 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claims 13-15, 20, 21, 28-30, 33-40, 51-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gore in view of admitted prior art (APA), Maeda, Myers Smith, Akram, Kanji, Takamatsu and Dalamangas.

For claim 3, Gore fig. 8 discloses a substrate 704 with sheet like stop member 702 having openings for contacts. Gore contacts are not resilient.

Myer at 50a, Smith at 4a and APA at 314A use resilient contacts on a substrate. Obvious to use such contacts in Gore on substrate 704 to enable detachable engagement with substrate 714. Claim 14 met by such arrangement. For claim 15, 20, etc obvious to add adhesive layers in view of Takamatsu at 18, Dalamangas at 24 and Maeda at 12. This would help to secure the substrates in place. For claim 20, Gore second substrate 714 has no resilient contacts. Kanji, fig. 1B and Akram fig. 8B^{use}₁ components with resilient contacts. Obvious to use these on Gore substrate 714 for detachable engagement of 714 to 704. Claims 21, 28, 20, 30 all met by references so applied.

Claims 33 defines obvious manner of assembly with sheet 702 applied to 704 and then solder 730 or Smith type contacts 4a or APA contacts applied to 704. Also obvious that the stop would define connection position of contacts just as do Myer stops 58 and those of Takamatsu at 16, 17.

Claim 36 defines only an obvious use of the system. Claim 39 defines obvious change producing no new result, claim 39 contacts read on solder bumps 730. Other claims met by the combination.

With regard to above rejections note that claims such as 33 do define steps but not any order of those steps and claim 30 calls for "contacts formed" but on what? The claim reads on contacts made and stored before the sheet is applied to the substrate and that added to the substrate as a final step. If such limitations are to be argued as basic for patentability they must be clearly stated in claims.

Claims 13-15, 33-40, 51-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dery in view of Hopfer, Gabrielian, Dalamangas and Takamatsu.

Dery includes substrate 24, resilient contacts 16, and a layer 12 with openings for the contacts. It appears obvious that layer 10 ^{acts} ~~acts~~ as a stop for substrate 22. Such usage is further suggested by fig. 2, Gabrielian fig. 3, Hopfer figs. 6, 7 and Takamatsu fig. 4, stops 16, 17. For claims 15, obvious to use adhesive in view of Takamatsu at 18 and Dalamangas at 24. Other claims met by references so applied. Note that placing contacts into sheet 12 openings meets forming step, claim 33 and could be done at any stage.

Claims 13-15, 20, 21, 28, 29, 33-40, 51-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myer in view of Takamatsu and Southgate.

Meyer fig. 5 includes substrates 54, 52 with contacts 50, 50a and a stop 58. It would have been obvious to form 58 as a sheet with an opening in view of Southgate at 14, fig. 2. This would protect the contacts. Claim 13 which does not positively recite "plural openings" does not define over single opening for plural contacts. For claim 14, obvious to use adhesive in view of Takamatsu and Southgate at 20.

Art Unit: 2839

For claims 13, 20, either contact 50, 50a is read as the resilient contact and 58, could be read as a stop on either substrate.

Any inquiry concerning this communication should be directed to Neil Abrams at telephone number (571)272-2089.

Abrams/ds

07/13/04


NEIL ABRAMS
EXAMINER
ART UNIT 2839